No. 9300255

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Farmers Marketing Corporation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS REQUIRED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Admire'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 31st *day of* August *in the year of our Lord one thousand nine hundred and* ninety-four.

Attest:

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Espy
Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Farmers Marketing Corporation

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
BR5694

3. VARIETY NAME
Admire ~~Atlantis~~ AAA 21 June 1994 per letter

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
3501 E.Broadway Road
Phoenix, AZ 85040

5. PHONE *(Include area code)*
602/437-4058

FOR OFFICIAL USE ONLY

PVPO NUMBER
9300255

FILING Date: July 8, 1993
Time: ☐ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $2325.00
Date: July 7, 1993
Certificate Fee: $ 275.00
Date: August 1, 1994

6. GENUS AND SPECIES NAME
Triticum aestivum

7. FAMILY NAME *(Botanical)*
Gramineae

8. CROP KIND NAME *(Common Name)*
Wheat -Bread Wheat

9. DATE OF DETERMINATION
~~June 1993~~ 1989 AAA 21 June 1994 per letter

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
AZ

12. DATE OF INCORPORATION
1952

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Rex K. Thompson, Plant Breeder
Farmers Marketing Corporation
3501 E.Broadway Rd.
Phoenix, AZ 85040
PHONE *(Include area code)*: 602/437-4058

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. ☒ Exhibit A, Origin and Breeding History of the Variety
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds) Date Seed Sample mailed to Plant Variety Protection Office 7-1-93
g. ☒ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☒ YES *(If "YES," answer items 16 and 17 below)* ☐ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act. Give date _____.)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES (If "YES," give names of countries and dates) Greece - Greek Registry March 1993
☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
Sheldon E. Richardson	President, C.E.O.	6/30/93
Sheldon E. Richardson	President	6-30-93

FORM CSSD-470 (5-89) Edition of FORM LS-470, 3-86, is obsolete

Exhibit A

Origin and Breeding History of Atlantis

AAA 'Admire' 21 June 1994

'~~Atlantis~~' (BR5694) is a hard red spring wheat developed by Farmers Marketing Corporation. Atlantis was derived from an F_2 head selection from a genetic male sterile facilitated recurrent selection population. The population was developed by the University of Arizona and released as AZ-MSFRS-86 Quality Enhanced Semi-dwarf Hard Red Spring Wheat Germplasm. A single plant from the F_3 headrow was harvested in Montana and increased in El Centro, California. The F_5, F_6, and F_7 generations were grown in Yuma, Arizona. Forty-eight heads were selected from the F_6 and grown as individual rows in 1989. Forty rows with uniform phenotype were harvested and bulked. A small increase of breeders seed was grown at Yuma, Arizona in 1990. Foundation seed is being grown at two locations Roll, Arizona, and Kimberly, Idaho (1993).

Atlantis is uniform and stable. Genetic male sterile plants were rogued from the Yuma increase in 1990 at a frequency of less than 1 in 1000. Because of possible seed set on unidentified male sterile plants, male sterility may continue to occur near that level subsequent to further head-rowing for more complete removal. Taller segregates or mixtures were found and rouged from the breeder increase at a rate of 1 in 500.

9300255

FMC addendum to PVP Application No. 9300255 'Admire'
Date: 12/22/93

1. Exhibit A

# of generations stability observed: 5 years, 1989-1993. Maricopa, and Yuma, AZ.

2. Exhibit A

Breeding criteria: Improved overall bread making quality ie. increased protein, and gluten strength via sedimentation performance. Improve and or sustain stable agronomic characteristics ie. maintain stable yield at a level equal to or better than Yecora Rojo, and improved lodging resistance.

3. Exhibit C *Item 9*

Date of Determination: 1989

Exhibit B

Novelty Statement

'Admire' PVPO 21 June 1994

~~Atlantis~~ is most similar to Yecora Rojo in plant type and appearance except for the following differences:

1. Atlantis glume-shoulder beaks are significantly shorter than Yecora Rojo at 10.25 mm (Tables 1 a and b).

2. Anthesis date (50% heading) for Atlantis averages three days later than for Yecora Rojo (Table 3).

3. Over four years of testing in Maricopa, AZ, Atlantis showed significantly less susceptibility to plant lodging at harvest (Table 4).

Table Descriptions

A. Tables 1a and 1b are for novelty statement and additional descriptions.

B. Tables 2-4 are for additional descriptions on agronomic data.

C. Table 5 is for available quality data.

Table 1.a. Mean glume beak measurements among six hard red spring wheat varieties. Means reported were derived from 60 measurements per variety.

Entry	Glume beak length (mm)
Cavalier	21.3
Poco Red	9.1
BR8631	14.3
'Admire' ~~Atlantis~~	7.1
Venus	16.9
Yecora Rojo	10.3
LSD (P=0.05)	1.3
C.V. (%)	25.8

Table 1.b. T-test† for the hypothesis "MEAN of LINE 1 = MEAN of LINE 2" for glume beak lengths among six hard red spring wheat lines. Sixty paired observations per line were made for glume beak lengths.

t' =

	Cavalier	P. Red	BR8631	Atlantis	Venus	Yecora Rojo
Cavalier		-21.1 **	10.6 **	-21.7**	-4.9**	18.7 **
P. Red			11.9 **	4.2**	-15.6**	-3.5 **
BR8631				-17.0**	3.1*	9.2 **
Atlantis					-12.7	9.8**
Venus						-8.5**
Yecora Rojo						

† T-test analysis was based on paired observations (t').

** t' values are significant when $P(t' \geq n_t) = 0.001$.

*t' values are significant when $P(t' \geq n_t) = 0.01$.

The varieties Cavalier, Poco Red, Atlantis, BR8631, and Venus are patent pending.

Admire' AAA 21 June 1994

Table 2. Grain yield in lbs per acre and test weight in lbs per bushel for ~~Atlantis~~ and Yecora Rojo over seven location years.

	Atlantis		Yecora Rojo	
Location/Year	lbs/acre	lbs/bu	lbs/acre	lbs/bu
Sacaton, AZ. 1988	7030.0	63.5	6938.0	65.0
Maricopa, AZ 1989	6655.0	63.0	6856.0	64.0
Yuma, AZ. 1989	7381.0	nd	6997.0	nd
Maricopa, AZ. 1990	6030.0	63.0	5805.0	62.0
Yuma, AZ. 1990	7052.0	nd	6670.0	nd
Maricopa, AZ 1991	7268.0	66.0	6926.0	65.5
Yuma, AZ. 1991	5529.0	nd	5612.0	nd
Mean	6706.4	63.9	6543.4	64.1
σ_{n-1}	688.12	1.44	582.28	1.54

nd = no data reported

Table 3. Maturity, lodging, and plant height for Atlantis, and Yecora Rojo over five location years.

	Date 50% Head		Lodge		Plant Ht. In.	
Location/Year	Atlantis	Y. Rojo	Atlantis	Y. Rojo	Atlantis	Y. Rojo
Sacaton, AZ 1988	3-30	3-25	0.00	0.0	nd	nd
Maricopa, AZ 1989	3-21	3-20	0.00	0.0	33.0	33.0
Yuma, AZ 1989	nd	nd	0.00	3.0	35.0	36.0
Maricopa, AZ. 1990	3-31	3-30	12.0	1.0	30.0	30.0
Maricopa, AZ 1991	3-26	3-22	0.0	24.0	34.00	35.0
Mean	3-27	3-24	2.4	5.4	33.0	33.5
σ_{n-1}	na	na	2.40	5.4	33.0	33.5

na = no application; nd = no data reported

Table 4. Agronomic data (means) for 1989-1992 combined hard red spring wheat trials conducted at Maricopa, Arizona.

Variety	Yield lbs.ac^{-1}	Test Wt. lbs. bu^{-1}	Plant Ht. in.	% lodge at harvest
CAVALIER	7037.00	63.50	33.25	12.25
~~ATLANTIS~~ 'Admire' AAA 21 June 1994	6861.00	64.00	32.50	3.00
VENUS	6437.00	63.90	35.40	15.00
YECORA ROJO	6610.00	64.10	33.50	11.25
LSD (P=0.05)	600.50	1.70	1.90	2.3

Table 5. Hard red wheat quality data (means) for two years among four varieties grown under flood irrigation[†]. Quality evaluations were done by the Bay State Milling Company at Winona, Minnesota.

Variety	Wheat Protein (as is)	Wheat Protein (12% moisture basis)	Milling Value	Stability	Average baking remarks
CAVALIER	14.7	14.3	36.5	23	Good
ATLANTIS	14.6	14.1	31.4	15.5	Good
VENUS	12.01	12.3	31.5	21	Fair
YECORA ROJO	13.9	13.8	31.0	22.5	Good

[†]All samples for testing were produced under desert irrigated environments.

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
COMMODITIES SCIENTIFIC SUPPORT DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Farmers Marketing Corporation

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
3501 E. Broadway Road
Phoenix, AZ 85040

FOR OFFICIAL USE ONLY

PVPO NUMBER 9300255

VARIETY NAME OR TEMPORARY DESIGNATION 'Admire' AMA 21 June 1994
~~Atlantis.~~ (BR5694)

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[1] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____ [2] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____
[ ] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[1][1][2] FIRST FLOWERING [1][2][1] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[ ][ ] NO. OF DAYS *EARLIER* THAN ..... [ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[ ][3] NO. OF DAYS *LATER* THAN ..... [7] 4 = LEMHI 5 = NUGAINES 6 = LEEDS
7=Yecora Rojo

5. PLANT HEIGHT (*From soil level to top of head*):
[ ][7][9] CM. HIGH
[ ][1] CM. TALLER THAN ..... [7] 7=Yecora Rojo
[ ][ ] CM. SHORTER THAN ..... [ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (*See reverse*):
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[ ][4] NO. OF NODES (*Originating from node above ground*)
[1][6] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[2] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][3] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2][5] CM. LEAF LENGTH (*First leaf below flag leaf*):

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[ ] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[1][3] CM. LENGTH [1][4] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[3] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[2] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[3] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[1] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[2] Brush: 1 = NOT COLLARED 2 = COLLARED

[ ] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[ ][8] MM. LENGTH [0][4] MM. WIDTH [4][6] GM. PER 1000 SEEDS

17. SEED CREASE:

[2] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'
2 = 80% OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[2] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 35% OR LESS OF KERNEL 'CHRIS'
3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] STEM RUST (Races) _____ [0] LEAF RUST (Races) _____ [0] STRIPE RUST (Races) _____ [0] LOOSE SMUT

[0] POWDERY MILDEW [0] BUNT [0] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY [0] APHID (Bydv.) [0] GREEN BUG [0] CEREAL LEAF BEETLE

[0] OTHER (Specify) _____ HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Yecora Rojo	Seed size	~~Yecora Rojo~~
Leaf size	Yecora Rojo	Seed shape	~~Yecora Rojo~~
Leaf color	Yecora Rojo	Coleoptile elongation	~~Yecora Rojo~~
Leaf carriage	Yolo	Seedling pigmentation	~~Yecora Rojo~~

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

Exhibit D

'Admire' AAA 21 June 1994 **Additional Description**

~~Atlantis~~ is a daylight insensitive early maturing hard red spring milling wheat with short stiff straw and good standability. Heads are tapered, lax, awned and white. Seeds are large elliptical, hard, and red. Brush is short and collared.

Grain test weight and yield ar competitive with Yecora Rojo and other hard red spring milling wheats grown in Arizona and California. Kernel size and weight is very good and similar to Yecora Rojo. Anthesis has averaged three days later than for Yecora Rojo.

Atlantis is adapted to the irrigated areas of Arizona and California where Yecora Rojo is grown and is well suited for bakery bread flour for local use or export where Yecora Rojo is marketed.

As with Yecora Rojo, Atlantis has significantly shorter glume beaks than Cavalier, Poco Rojo Venus, and BR8631 all of which are patent pending.

Atlantis also shows less susceptibility to lodging at harvest than Cavalier and Venus.

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4. Exhibit D

Admire vs. 'Anza', 'Tadinia', 'Spillman'

a. Admire vs. Anza

Admire and Anza differ by the following characters described in Addendum Table 1. Admire is near equal in yield stability as Anza with generally lower yields when grown in similar environments. Admire is taller by eight centimeters, is more lax in spike density, has white awns and glumes compared to white amber awns and glumes of Anza, has higher test weight, and significantly higher protein content and gluten strength for bread making than Anza. Data is based on Southern CA and Central AZ environments.

Addendum Table 1. Characters that represent differences between Admire and Anza.

Character	Anza	Admire
grain yield (#/ac)	7487(σ_{n-1} = 1064)*	6561(σ_{n-1} = 1109)*
plant ht. (cm)	75•	83••
spike density	4•	1
glume / awn color	white-amber•	white••
test wt (bu. wt)	61.2§	64••
protein (12 % mb)	11.5§	14.1§§
protein (12% mb)	10.9§§§	14.1§§

* Anza yield data derived from four years at Imperial CA; Admire yield data derived from three years at Maricopa, AZ.
• Information from pcGrin germplasm network.
•• Average performance on five location years in Arizona.
§ Two year average at Imperial, CA
§§ Two year average at Maricopa, AZ
§§§ Average protein percentage based on five years across all locations in the UC Davis regional common wheat performance tests in California.

Admire and Anza have not been tested together. Therefore, data from Imperial, CA and Maricopa, AZ are used for comparisons because of their location similatrities in arid land irrigation, cultural practices, and climate.

Exhibit D: ***continued***

Admire vs. Tadinia

Admire is different from Tadinia by the following characters described in Addendum Table 2. Over time, Tadinia has shown less deviation in yield over years than Admire. Admire is shorter than Tadinia by 12 centimeters, has more lax spike density, has green flag leaf compared to a yellow-green flag leaf of Tadinia, has white versus white-amber glumes and awns, and higher test weight, protein and gluten strength than Tadinia. Tadinia is expected to have higher leaf rust resistance than Admire. Tadinia selection criteria included disease resistance where Admire selection criteria included improved overall grain quality.

Addendum Table 2. Characters that represent differences between Admire and Tadinia.

Character	Tadinia	Admire
grain yield (#/ac)	7210(σ_{n-1} = 463)*	6561(σ_{n-1} = 1109)*
plant ht. (cm)	95•	83••
spike density	3•	1
flag leaf color	yellow green	green
glume / awn color	white-amber•	white••
test wt (bu. wt)	59§	64••
protein (12 % mb)	12.6§	14.1§§
protein (12% mb)	11.28§§§	14.1§§

* Tadinia yield data derived from four years at Imperial CA; Admire yield data derived from three years at Maricopa, AZ.
• Information from pcGrin germplasm network.
•• Average performance on five location years in Arizona.
§ Two year average at Imperial, CA.
§§ Two year average at Maricopa, AZ.
§§§ Average protein percentage based on five years across all locations in the UC Davis regional common wheat performance tests in California.

Admire and Tadinia have not been tested together. Therefore, data from Imperial, CA and Maricopa, AZ are used for comparisons because of their location similarities in arid land irrigation, cultural practices, and climate.

Exhibit D: ***continued***

Admire vs. Spillman

Admire is different from Spillman by the following characters described in Addendum Table 3. Limited information was readily available on Spillman. Spillman is stripe rust resistant where Admire is not. When grown in Maricopa, AZ over two and three years Spillman had significantly lower but more stable yields than Admire. Admire is significantly shorter in plant height than Spillman. Admire is daylight insensitive where Spillman is daylight sensitive. Spillman has white awns with occasional tan veins in the glumes where Admire has white awns and glumes. Test weight was significantly higher for Admire over Spillman.

Addendum Table 3. Characters that represent differences between Admire and Spillman.

Character	Spillman	Admire
grain yield (#/ac)	5779(σ_{n-1} = 458)*	6561(σ_{n-1} = 1109)*
plant ht. (cm)	116*	83*
growth response	daylight sensitive	daylight insensitive
glume / awn color	white-tan veins•	white••
test wt (bu. wt)	55*	64*

* Spillman yield data derived from two years at Maricopa, AZ. Admire yield data was derived from three years at Maricopa, AZ.
• Information from pcGrin germplasm network.
•• Average performance on five location years in Arizona.

Exhibit E

Statement of Basis of Applicants Ownership

Regular employees of the applicant, Farmers Marketing Corporation, have developed ~~ATLANTIS~~.
'Admire' AHA 21 June 1994
Farmers Marketing Corporation is the proprietary owner and intended commercial user of the variety.